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CRIMINAL JUSTICE AND POLICE SYSTEMS: MANAGEMENT AND IMPROVEMENT OF POLICE AND OTHER LAW ENFORCEMENT AGENCIES, PROSECUTION, COURTS AND CORRECTIONS; AND THE ROLE OF LAWYERS

Addendum

United Nations Crime and Justice Information Network: present and future dimensions; towards the establishment of a United Nations crime and justice clearing-house

Progress report prepared by the Secretariat

Summary

The present report has been prepared pursuant to Economic and Social Council resolution 1994/19, section IV, in which the Council recommended that the workshop entitled "International cooperation and assistance in the management of the criminal justice system: computerization of criminal justice operations and the development, analysis and policy use of criminal justice information" should consider such issues as cost-effective ways of promoting the availability of data. The report presents a review of progress made in the development of the computerized United Nations Crime and Justice Information Network, its scope and planned activities, with particular reference to the needs and difficulties, both logistical and technical, relating to the electronic distribution of crime-related information to and from developing countries.

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INTRODUCTION

A. Legislative background

1. The Economic and Social Council, in its resolution 1993/32, on preparations for the Ninth United Nations Congress on the Prevention of Crime and the Treatment of Offenders, endorsed the programme of work for the Ninth Congress, including the holding of, *inter alia*: a workshop entitled "International cooperation and assistance in the management of the criminal justice system: computerization of criminal justice operations and the development, analysis and policy use of criminal justice information".

2. In its resolution 1994/19, section IV, the Council recommended that the workshop should evaluate progress in computerization and the policy and management use of information achieved since the Eighth United Nations Congress on the Prevention of Crime and the Treatment of Offenders, held at Havana from 27 August to 7 September 1990. The Council also recommended that the workshop should consider such issues as cost-effective ways of promoting the availability of data.

3. The Council, in its resolution 1986/11, invited the Secretary-General to make all efforts to, *inter alia*, establish in cooperation with the United Nations institutes and other entities concerned, a global crime prevention and criminal justice information network, with the Crime Prevention and Criminal Justice Branch of the Secretariat as a focal point, including a mechanism for the centralization of inputs from non-governmental organizations and scientific institutions. Pursuant to that resolution, a series of informal preparatory meetings were held at United Nations Headquarters and at Vienna. The meetings considered ways and means of providing the United Nations crime prevention and criminal justice programme with a cost-effective and modern information mechanism.

4. In collaboration with the School of Criminal Justice at the State University of New York at Albany, the United Nations Crime and Justice Information Network (UNCJIN)* was established in September 1988. The founding members of UNCJIN were the Crime Prevention and Criminal Justice Branch and the following institutes cooperating with the United Nations in the field of crime prevention and criminal justice: the United Nations Interregional Crime and Justice Research Institute (UNICRI);** the Asia and Far East Institute for the Prevention of Crime and the Treatment of Offenders; the Latin American Institute for the Prevention of Crime and the Treatment of Offenders; the European Institute for Crime Prevention and Control, affiliated with the United Nations;*** the Arab Security Studies and Training Centre; the Australian Institute of Criminology and the Centro Nazionale di Prevenzione e Difesa Sociale.

5. The Economic and Social Council, in its resolution 1989/68, requested the Secretary-General to secure adequate resources for the full realization of a global crime prevention and criminal justice information network, including recruiting a specialist to implement it, ensuring access to all potential users and taking advantage of existing information networks.

6. In 1991, extrabudgetary funding was secured for the network from the Bureau of Justice Statistics of the United States Department of Justice, and that support has continued up until the end of 1994.****

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*Formerly called the United Nations Criminal Justice Information Network.

**Formerly called the United Nations Social Defence Research Institute.

***Formerly called the Helsinki Institute for Crime Prevention and Control, affiliated with the United Nations (HEUNI).

****Until the end of 1992, the network was operated through a host information service known as the Telecommunications Cooperative Network, which was the cheapest and most reliable host network available at the time. The Telecommunications Cooperative Network had been especially set up to cope with international aspects of computer networks. It also provided gateways to other networks. The cost was high, so membership was limited to the regional institutes and a small number of universities.

(continued...)

7. A report of the Secretariat on computerization of the administration of criminal justice (A/CONF.144/14 and Add.1) was considered by the Eighth Congress, under agenda item 4, on criminal justice policies in relation to problems of imprisonment, other penal sanctions and alternative measures (topic II).

8. On the recommendation of the Eighth Congress, the General Assembly adopted resolution 45/109, in which it emphasized the common problems faced by all Member States in the administration and computerization of criminal justice. In the same resolution, the General Assembly requested the Secretary-General, in cooperation with the network of United Nations institutes for the prevention of crime and the treatment of offenders, to strengthen the global crime and criminal justice information network by, *inter alia*: (a) enhancing communication between Member States by utilizing an electronic network; and (b) developing and distributing appropriate publications, reports and newsletters.

9. The European Regional Preparatory Meeting for the Ninth United Nations Congress on the Prevention of Crime and the Treatment of Offenders, held at Vienna from 28 February to 4 March 1994, considered the use of state-of-the-art information technology to be a necessary ingredient in promoting international police cooperation (A/CONF.169/RPM.3 and Corr.1, para. 80). It recommended that the workshop on international cooperation and assistance in the management of the criminal justice system, to be held within the framework of the Ninth Congress, should provide a mechanism for identifying needs for the creation of statistical infrastructures where those were essential to improving national statistical reporting systems (A/CONF.169/RPM.3 and Corr.1, resolution, sect. I). It proposed that the Ninth Congress formulate practical suggestions on how to mobilize and integrate the services of existing information centres in various countries, thereby providing States with accurate information on effective management practice in regard to the administration of justice, including police services (A/CONF.169/RPM.3 and Corr.1, para. 86).

10. The Western Asia Regional Preparatory Meeting for the Ninth United Nations Congress on the Prevention of Crime and the Treatment of Offenders, held at Amman from 20 to 24 March 1994, invited the Ninth Congress to consider ways of further developing forms of technical cooperation, such as the provision of training and research programmes and the development of working manuals (A/CONF.169/RPM.5, resolution, sect. I). It expressed its appreciation to the Arab Security Studies and Training Centre for its role in facilitating the exercise of the United Nations global coordinating function, *inter alia*, by hosting joint programme coordination meetings of the United Nations crime prevention and criminal justice programme network (A/CONF.169/RPM.5, resolution, sect. I.A). It called on Member States to promote further cooperation between their national crime prevention and criminal justice sectors in order to improve information exchange, in particular at the regional level (A/CONF.169/RPM.5, resolution, sect. I.B).

11. In its resolution 1993/34, section IV, the Economic and Social Council requested the Secretary-General to strengthen and expand the clearing-house functions of the Crime Prevention and Criminal Justice Branch and to organize training courses that would enable criminal justice professionals, in particular those in developing countries, to acquaint themselves with the services of the United Nations Criminal Justice Information Network.

12. In its resolution 3/3, the Commission on Crime Prevention and Criminal Justice, recalling Economic and Social Council resolutions 1992/22 and 1993/34, section IV, recommended changing the name of the United Nations Criminal Justice Information Network to the United Nations Crime and Justice Information Network.

****(...continued)
UNCJIN had some 50 members in 1990, when it was moved to Internet. Today, membership is free (only access to Internet is required), there are 10 times as many members and there are far more extensive databases available, since storage costs are minimal.

13. In its resolution 1993/56, the Economic and Social Council reiterated the high priority that it attached to easy, economical, uncomplicated and unhindered access for States Members to the growing number of computerized databases and information systems and services of the United Nations. The Secretary-General reported to the Council at its substantive session of 1994 on the follow-up action taken on that resolution, including United Nations Internet activities (E/1994/98).

14. The Economic and Social Council, on the recommendation of the Commission at its third session, adopted resolution 1994/19. In section II of that resolution, the Council invited the Ninth Congress to consider practical methods for promoting, where necessary, the exchange of experiences and information on international cooperation, including the establishment and development of depositories of information on national legislation, statistics and other data.

15. The present report provides information on the progress made in developing UNCJIN as a tool for promoting through electronic networking greater availability of crime-related data and other information. The Economic and Social Council, in its resolution 1994/18, invited Member States to ensure the widest possible dissemination of United Nations standards and norms in crime prevention and criminal justice. In its resolution 1994/22, the Council stressed that providing technical assistance through, *inter alia*, the dissemination and exchange of information is one of the most effective means of intensifying international cooperation. At the third session of the Commission, it was noted that broad dissemination of those standards and norms would contribute to the observance, in the period 1990-1999, of the United Nations Decade of International Law.[1] The Commission noted that there was a need for intensified exchanges of information between States concerning legislation and procedures.[2] It also noted that the involvement of research-oriented institutions* was important to the development of a proper scientific base.[3] It was noted that knowledge transfer and other forms of mutual assistance were of benefit at the global level; the Crime Prevention and Criminal Justice Branch could play a more central role in promoting those forms of mutual assistance if its programme capacity was strengthened.[3]

B. Substantive background

16. Regional preparatory meetings for the Ninth Congress have dealt with the question of developing a worldwide infrastructure for the efficient and effective exchange of criminal justice information. The African Regional Preparatory Meeting for the Ninth United Nations Congress on the Prevention of Crime and the Treatment of Offenders, held at Kampala from 14 to 18 February 1994, reiterated the need to create a more reliable database on criminal justice in the region. It expressed the hope that, with an increasing level of computerization and assistance in the development of national capacities for the collection of statistical information, the number of African countries contributing to the United Nations crime surveys would further increase (A/CONF.169/RPM.2, para. 74).

17. The Asia and Pacific Regional Preparatory Meeting for the Ninth United Nations Congress on the Prevention of Crime and the Treatment of Offenders, held at Bangkok from 17 to 21 January 1994, noted in its resolution that one of the purposes of the United Nations, as stated in the Preamble to its Charter, was to achieve international cooperation in solving international problems (A/CONF.169/RPM.1/Rev.1 and Corr.1, resolution). It emphasized that the majority of criminal justice systems lagged behind the development of new approaches and technology, including those in information technology, which were widely used in other fields with great increases in efficiency. Adequate investment in new methods and technology could be repaid by gains in effectiveness and efficiency. It suggested that criminal justice and police systems should be strengthened by, among other things, strengthening the exchange of views, expertise between and among

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*Many of which are represented on UNCJIN.

countries internationally, regionally and bilaterally, and by enhancing the coordinating role of the relevant United Nations bodies (A/CONF.169/RPM.1/Rev.1 and Corr.1, paras. 46 and 48).

18. The twentieth century has seen rapid changes in information technology, and the pace of change has been most dramatic in the last decade. The advent of the personal computer and its rapid transformation into a compact single unit with power equal to a mainframe computer system of just 10 years ago have made it possible to store and manage massive amounts of information as was never possible before. In addition, the revolution in communications technology - fibre optics, satellite transmission - has made it possible to transport large amounts of information anywhere in the world in a fraction of a second.*

19. It is important to recognize the global proportions of the revolution in information and communications technology. This is not to say that revolutionary changes have begun or have occurred in the same way in every country or region of the world; however, the changes that have occurred have left no region untouched. Satellite television can reach any part of the globe. The global computer network can reach any country that has a telephone system and, with satellite technology, can reach countries via satellite that do not even have a telephone system. Experts on the information revolution have noted that the information society transcends all political, social and economic boundaries.[4]

20. This means that less developed countries may be on the receiving end of this information explosion. That is, they may be in a position to receive satellite transmissions, for example, but they are not in a position to make an input into the information flow. The information flows one way and is not interactive. That is especially the case with regard to mass communications such as television and radio and the popular print media. Improvement in the literacy rates of States was, until the advent of television, a two-edged sword. With the introduction of print literacy came the possibility to be subjected to the one-way flow of print media. Television has, to some degree, changed that: a person does not need to be able to read in order to obtain information from television.

21. That observation has led many persons concerned with public education, public literacy and access to information to advocate the development of a new concept called information literacy: developing in individuals the skills not only to read, but also to be able to critically evaluate the worth and validity of information, and developing the skills to seek out information that is needed. This approach involves an active learner model as opposed to the more traditional, passive learner model, in which the individual is the passive recipient of information that is fed to him or her by individuals or organizations that have control of the various print and visual media.[5]

22. It is the traditional, one-way flow of information that is currently under scrutiny. Computer network systems are interactive, and they provide open access to all who are connected. On a network such as Internet, it is possible to contribute information and receive it without the participants in the information flow having any knowledge of the authority, qualifications or station in life of the participants.** Thus, information exchange by this model furthers the development towards the democratization of knowledge. Because of the increased complexity of the flow of information, however, and the difficulty in analysing

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*For a critical review of the process of the democratization of knowledge, see Neil Postman, *Technopoly* (New York, Vintage, 1993).

**On-line communication, perhaps the ultimate in democratic exchange of information, eliminates barriers. People can be whoever they want to be. Shy people become bold. Accounting clerks communicate on the same level as chief executive officers (T. LaQuey and J. Ryer, *The Internet Companion* (Reading, Massachusetts, Addison-Wesley, 1993)).

information obtained in this manner, simple literacy is no longer sufficient. The concept of literacy, therefore, has now become that of information literacy.*

23. Not only has there been a revolution in information technology and communications, but there has also been an information explosion in criminal justice. Criminal justice educational programmes continue to expand throughout the world, and the amount of research published is at an all-time high. National government institutions and research organizations have also begun to produce and disseminate large amounts of information on their criminal justice systems and on crime prevention and the treatment of offenders. Those developments are significant in that many of the attempts to disseminate the information are being made through a variety of frequently published newsletters. Newsletters have made a comeback since the revolution in desktop publishing. They also lend themselves well to dissemination electronically via Internet, as discussed below.

24. All of the changes recounted above have culminated in the "information superhighway", with Internet at its core. Internet is a conglomeration of computer networks that are connected through various protocols and rules of operation. The special feature of Internet is its worldwide connection; electronic mail serviced by Internet is currently accessible in more than 150 countries, many of which are developing countries.** Internet is not actually run by any particular organization or body. The network is a loose connection of many smaller networks that have different purposes and goals.

25. The growth of Internet in the last two years has been extremely fast. As of 4 August 1994, there were 3.2 million reachable computer machines, representing an increase of 81 per cent during a one-year period and an even greater increase during a six-month period. One million new hosts were added in the first six months of 1994. According to some reports, Internet has about 30 million users, and that number is expected to double within a year.[6] Perhaps the main reason for the rapid increase in Internet users is the fact that the cost of being connected to Internet has dropped dramatically in the past three years. Many individuals working for universities and research organizations or state offices enjoy access to it at little or no cost. And the commercial costs of such access have also become much more affordable, although some communications costs in Europe and elsewhere outside the United States remain relatively high.

26. The various facilities of Internet demonstrate that the capacity to exchange and disseminate information has become far greater than ever before. The transformation is even greater than that made possible by the Gutenberg printing press. Such an open, low cost, interactive, two-way process of information exchange has never before been possible. That is what sets Internet apart from all other developments that have contributed to the emergence of the global information society.

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*Some organizations have argued that it is a basic right of all individuals to have access to and the ability to use information to enhance their quality of life, to succeed in their work and to fulfil their civic responsibilities (P. S. Breivik, "Education for the information age", D. W. Farmer and T. F. Mech, eds., *New Directions for Higher Education*, No. 78, summer 1992).

**As of 4 August 1994, the full services of Internet were available in the following countries or areas: Algeria, Antarctic, Argentina, Australia, Austria, Belgium, Brazil, Bulgaria, Canada, Chile, China, Colombia, Costa Rica, Croatia, Cyprus, Czech Republic, Denmark, Ecuador, Egypt, Estonia, Fiji, Finland, France, Germany, Greece, Hong Kong, Hungary, Iceland, India, Indonesia, Iran (Islamic Republic of), Ireland, Italy, Japan, Kuwait, Latvia, Liechtenstein, Lithuania, Luxembourg, Macau, Malaysia, Mexico, Netherlands, New Zealand, Nicaragua, Norway, Panama, Peru, Philippines, Poland, Portugal, Republic of Korea, Republic of Moldova, Romania, Russian Federation, Saudi Arabia, Singapore, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Thailand, Tunisia, Turkey, Ukraine, United Kingdom of Great Britain and Northern Ireland, United States of America, Uruguay and Venezuela.

I. SERVICES PROVIDED BY THE UNITED NATIONS CRIME AND JUSTICE INFORMATION NETWORK

27. The services provided by UNCJIN on Internet may be divided into three categories: (a) structured access to criminal justice and related information; (b) the storage, accumulation and dissemination of databases; and (c) the open exchange of information via electronic bulletin-boards and electronic "meetings".

28. Structured access to criminal justice and related information is obtained via the UNCJIN Gopher system. Gopher is the name given to a particular type of software on Internet that helps the user to find the particular data or other information that might be needed. By choosing items from a series of menus on Gopher, it is possible for the user to steer through the mass of information and to retrieve the information that is needed. Not only is Gopher easy to use because of the menu system, but it also allows the user to search the menus of all Gopher systems on any computer that has such a program, anywhere in the world, so long as that computer is connected to Internet. That makes Gopher tremendously powerful, because it means that every Gopher menu is connected to every other Gopher menu. It allows gateways or access to other Gopher systems all over the world. Thus, for example, on the UNCJIN Gopher system, it is possible to gain access to, for example, the United Nations Development Programme (UNDP) Gopher system or the World Health Organization (WHO) Gopher system and to search or navigate through their menus at will. The power of such access lies in the fact that it is no longer important where the information is physically located - whether it is on a computer in Cairo, New York, Tokyo or Vienna. This revolution in networking - the "information superhighway" - eliminates the need for a large mainframe computer. Internet has effectively turned the huge number of smaller desktop computers into one massive world computer.

29. UNCJIN is committed, according to the various legislative mandates described in section A above, to developing, storing and disseminating databases related to the United Nations crime prevention and criminal justice programme and, in particular, to the activities of the Crime Prevention and Criminal Justice Branch and of the institutes and entities, both intergovernmental and non-governmental, cooperating within the framework of the programme. Accordingly, on the UNCJIN Gopher system, there is a wide range of information, including selections of statistics from the United Nations surveys of crime trends and operations of criminal justice systems. Criminal justice country profiles produced by interregional and regional institutes, all United Nations standards, norms, rules and guidelines in crime prevention and criminal justice, crime statistics and reports from various Governments (for example, press releases and reports of the Bureau of Justice Statistics of the United States Department of Justice), newsletters of various criminal justice institutes and other non-governmental organizations concerned with criminal justice at the international level, and the world directory of criminological institutes. A menu on the UNCJIN Gopher system might appear as follows:

1. About UNCJIN
2. United Nations rules
3. Available information from UNCJIN
4. United Nations criminal justice country profiles
5. United Nations Development Programme
6. Bureau of Justice Statistics documents
7. United States Supreme Court decisions, recent
8. World Criminal Justice Library Network
9. CIA World Factbook 1992
10. Center for the Study of Constitutionalism in Eastern Europe
11. World Health Organization Gopher
12. F.B.I. Gopher
13. Foreign and international law: primary documents and commentary

30. Selecting the first item on the above menu might produce the following:

1. Index of available rules from the United Nations
2. Standard Minimum Rules for the Treatment of Prisoners
3. Declaration on the Protection of All Persons from Being Subjected to Torture and Other Cruel, Inhuman or Degrading Treatment
4. Code of Conduct for Law Enforcement Officials
5. Safeguards guaranteeing protection of the rights of those facing the death penalty
6. Milan Plan of Action
7. Guiding Principles for Crime Prevention and Criminal Justice in the Context of Development and a New International Economic Order
8. Basic Principles on the Independence of the Judiciary
9. Model Agreement on the Transfer of Foreign Prisoners and recommendations on the treatment of foreign prisoners
10. United Nations Standard Minimum Rules for the Administration of Juvenile Justice
11. Declaration of Basic Principles of Justice for Victims of Crime and Abuse of Power
12. United Nations Standard Minimum Rules for Non-custodial Measures (The Tokyo Rules)
13. United Nations Guidelines for the Prevention of Juvenile Delinquency (The Riyadh Guidelines)
14. United Nations Rules for the Protection of Juveniles Deprived of their Liberty
15. Basic Principles on the Use of Force and Firearms by Law Enforcement Officials
16. Basic Principles on the Role of Lawyers
17. Guidelines on the Role of Prosecutors
18. Model Treaty on Extradition

31. Access is provided to all the major criminal justice libraries in the world (including their updated accession lists) via the World Criminal Justice Library Network. Furthermore, access is provided to various electronic journals in criminal justice, to the constitutional documents of a growing number of countries throughout the world, to United Nations organizations (UNDP, the United Nations Educational, Scientific and Cultural Organization (UNESCO) and WHO), and to various government agencies in the United States, such as the Department of State and the Department of Justice. This, however, is just a small sample of what is available. It is impossible to cover all sources of information that are accessible, since there are so many of them and they change daily.

32. The most recent addition to UNCJIN is a file transfer protocol service,* which allows for the retrieval of computer files from a particular site. The files may be in any form and may be retrieved by any user who (a) is connected to Internet and (b) has file transfer protocol software. UNCJIN has made available the data sets of the first, second and third United Nations surveys of crime trends and operations of criminal justice systems in various software and statistical formats. The service is slightly more difficult to use than others since it requires some knowledge of programming commands, but it is especially suited to researchers who wish to obtain data sets for conducting research and analysis.

33. The exchange of information is the most important goal of UNCJIN. The UNCJIN Gopher system makes access to information and databases relatively easy for users all over the world. It is also a relatively straightforward matter for UNCJIN to set aside sections of the Gopher menus for databases and other sources of information. When national organizations make available data and other statistical information about their

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*A set of software rules that are used to allow one computer to "speak" to another so that its files may be retrieved (see also Raul Zambrano, "Sustainable development network: extending the links and their value", *Logon*, No. 25, June 1994, p. 7; and Mutawakilu A. Tiamiyu, "Sub-Saharan Africa and the paperless society: a comment and a counterpoint", *Journal of the American Society for Information Science*, vol. 40, No. 5 (1989), pp. 325-328).

countries, they are essentially paving the way for the exchange of information. The most effective and immediate way of exchanging information, however, is through UNCJIN-L, an electronic discussion list and bulletin-board.

34. UNCJIN-L is essentially a large list of users who are connected electronically to each other, so that each time they post a message it is immediately sent to everyone on the list. UNCJIN-L now has almost 500 members, and its membership is growing rapidly. The information exchanged by users on the list ranges from announcements of conferences and meetings worldwide to job announcements, descriptions of new criminal justice educational programmes, requests for assistance in finding particular types of information for research and legislative use, and a discussion of significant issues of the day, such as child abuse, the measurement of crime, the age of criminal responsibility, the relationship between peace-keeping and policing, freedom of speech, the purposes of punishment, conditions of prisons, and the status of rehabilitation. As the number of users on the list increases, its potential benefit will increase. Some striking examples of its usefulness are outlined in section II below.

35. The UNCJIN-L bulletin-board and UNCJIN file transfer protocol are particularly important for developing countries. The services may be accessed by electronic mail by users who do not have full access to Internet. Many of the connections made to Internet permit only electronic mail exchange; such connections are commonly the only ones available in developing countries. Methods of connecting developing countries to Internet are described in the annex to the present report. While the procedures are perhaps more cumbersome than accessing UNCJIN Gopher or file transfer protocol directly, they are nonetheless effective and, once learned, easily put into daily practice.*

II. THE IMPORTANT ROLE PLAYED BY THE UNITED NATIONS CRIME AND JUSTICE INFORMATION NETWORK IN THE GLOBAL INFORMATION SOCIETY

A. Accessibility of the United Nations Crime and Justice Information Network

36. Information is the key to accountability, and accountability is a key concept involved in "good governance".** The more information that Governments provide concerning the operations of criminal justice systems and the patterns of crime in their countries, the more there is a possibility for accountability. It can be particularly interesting for Governments to observe, for example, how other Governments administer and expend resources on criminal justice, the differential rates of reported crime in other countries, the different numbers of offenders, the extent of use of prison as a criminal sanction, the types of crime prevention programmes, and the size and quality of police forces and court systems. The exchange of information concerning these and other related issues helps create a climate of governmental responsibility for crime prevention and criminal justice and sets the pace for the development of rational policy formulation.

37. Until UNCJIN began operating on Internet, however, the dissemination of criminal justice information was limited to the circulation of official documentation and newsletters. It is expensive to market and circulate hard-copy United Nations publications. Furthermore, the availability of the data sets of the United Nations surveys of crime trends and operations of criminal justice systems was widely considered to be inadequate. Making available on Internet United Nations information on crime prevention and criminal

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*For detailed instructions on how to access bulletin-boards and databases via file transfer protocol on Internet by electronic mail, see Clay Shirky, *The Internet by e-mail* (Emmeryville, California, Ziff-Davis, 1994).

**See the report of the Secretary-General on progress made on the fourth and fifth surveys of crime trends and operations of criminal justice systems, and other initiatives under way to acquire, process and distribute crime prevention and criminal justice data (E/CN.15/1994/2, para. 3).

justice has drastically changed all that. Information on UNCJIN Gopher or file transfer protocol can, theoretically, directly be accessed by some 30 million Internet users. While so many users will not be accessing UNCJIN databases, the fact remains that more people are likely to make use of the information.

B. Information on developing countries

38. The UNCJIN Gopher program makes it possible to access information on developing countries at the touch of a computer key. For example, a person running the program might have access to the following menu under "Peace, human rights and social justice in developing countries":

1. What is PeaceNet?
2. Organizations on PeaceNet (a sample)
3. Africa networking on PeaceNet
4. Balkans/Ex-Yugoslavia
5. Central America and Mexico information
6. Cuba information
7. Defence conversion and military toxics
8. East Timor networking on PeaceNet
9. Human rights information
10. Immigrant and refugee rights
11. Latin America information
12. Middle East information

39. Choosing the third item on the above menu might produce the following:

1. Connect with Africa on PeaceNet
2. Information resources on PeaceNet about Africa
3. Africa organizations online
4. Affiliated networks in Africa
5. Africa conferences on the APC and Partner networks
6. CABECA: Electronic Communication Network Initiative for Africa
7. South Africa Watch Magazine (from Oxfam Canada)
8. Hunger Project - Africa Prize for Leadership
9. Other Africa information on Internet

40. The UNCJIN-L bulletin-board makes it possible to exchange information immediately without regard for national boundaries, statuses or vocations. Typical topics of the day on UNCJIN-L might be as follows:

1. Minimum age for prosecution (4 messages)
2. New drug text - the Netherlands
3. Death row inmates and history of child abuse
4. For students at Lamar University
5. Faculty positions
6. Battered parents
7. UNCJIN rules reminder
8. Causes of delinquency
9. Parent abuse
10. Call for papers

C. Practical benefits of the electronic exchange of information

41. There are a number of examples of the practical uses of information exchange on UNCJIN-L. In September 1994, an urgent request was posted on the UNCJIN-L bulletin-board for any information concerning the minimum legal age of criminal responsibility in various countries. The individual who requested the information was an attorney involved in a case before the European Commission on Human Rights. The case involved two children who had been tried as adults for killing a toddler. They each had been sentenced to life in prison for having committed the crime. Since the country in question was a signatory to the Convention for the Protection of Human Rights and Fundamental Freedoms,[7] the case had been brought before the Commission. Information on the age of responsibility for children in other countries was therefore highly pertinent to the case but not readily available. The request posted on UNCJIN-L brought forward several responses, some of which were based on data obtained from the extensive criminal justice profiles assembled for the United Nations surveys of crime trends and operations of criminal justice systems, some were from criminal justice experts and others were from a non-criminal justice audience. The attorney who had requested the information later noted that, at the time, there was simply nowhere else to turn to for the information he needed.

42. In another instance, a note from the Institute of Criminology at the University of Cape Town was posted on UNCJIN-L informing of the drafting of a new juvenile justice bill for South Africa and expressing gratitude for the provision of information on minimum legal age of responsibility, which had been the basis of much of the discussion on the subject.

43. UNCJIN on Internet serves as an intermediary hosting electronic mail conferences. For instance, in January 1995, in the United States, the Department of Criminal Justice of the University of Arkansas at Little Rock sponsored an international conference on crime and justice. The difference between that conference and others of its kind was that none of the participants needed to leave their workstations as the conference was conducted on Internet. Because of the budgetary constraints of academic institutions, many people attend fewer, if any, professional conferences or none at all; others stay for shorter periods of time. Conducting the above-mentioned conference on Internet alleviated some of those budgetary problems because the participants did not have to travel to reach the conference site. All that was required of them was to register for the conference and to subscribe to various panels. Participants could even "present" their papers while remaining in their homes or offices. Another way in which UNCJIN has influenced criminal justice constituency can be seen in its impact on forming new discussion groups, such as the newly established electronic discussion forum on computer-related crime (COMCRI-L).*

44. At the Ninth Congress, Internet electronic mail will be one of the channels used to transmit documents to the United Nations Office at Vienna for processing. That will result in considerable savings in the budget for the Ninth Congress.

45. It can be seen from the above examples that the exchange of information has a multiplier effect when it occurs via an electronic bulletin-board. It is also apparent that such an exchange of information can have a significant practical impact on the enforcement of human rights in criminal justice and the legislation process. The multiplier effect occurs beyond the UNCJIN-L list, when significant actors in the criminal justice system, such as lawyers, judges, police, politicians, legislators, planners and policy makers, are all affected by information originating from one small request posted on UNCJIN-L. Perhaps the most impressive fact of all is that the information is immediately available worldwide.

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*COMCRI-L may be accessed using the following electronic address: listserv@vm.cc.uni.torun.pl. subscribe COMCRI-L <first name> <last name>.

46. Considerable additional benefits have accrued from this medium of information exchange. Early in 1994, there was a spirited debate on UNCJIN-L on the topic of race and criminal justice. The discussion, which was often animated and emotional, involved individuals of various racial, religious, ethnic and social backgrounds. The discussion was not only provocative but informative. What is more important, it was a discussion that could not have occurred in a setting such as a classroom, where social and ethnic backgrounds may play an important part in who speaks and who does not and what is actually said. In an electronic discussion, however, people do not have to physically confront each other, nor do they have to reveal their actual identities. Thus, information may be exchanged "anonymously". Issues are therefore discussed in a much more open and frank manner. The established way of disseminating information, from the top down, as described in section I. B above, is potentially broken. The "weaker" participants in the information exchange (i.e. members of the less powerful groups in society) do not have to sit back and receive the information as it is given to them. They may react and contribute fully and equally to the UNCJIN-L discussion.

47. That is why UNCJIN-L is of great importance to less developed countries, which, in the past, have been the recipients of information from the top down. As more and more developing countries gain access to Internet, it will be more and more possible for a two-way flow of information to occur. It is likely that the development of electronic telecommunications and information systems will leap ahead of the development of other more traditional infrastructure of developing countries, if it has not already done so. Thus, it is most important for UNCJIN to be ready to meet the expected upward surge in the number of developing countries connected to Internet. That number has increased substantially in the last two years.

III. PROBLEMS AND CHALLENGES

A. Globalization of criminal justice and diversity of criminal justice policies

48. In the past five years, advances in understanding of the global implications of policy issues in such fields as the environment, industrial development, production, ecology and economics have been accompanied by a rapid globalization of criminal justice. Not only has the communications revolution brought with it the instant relaying of crimes and issues related to criminal justice via satellite television news to almost any corner of the world, but certain crimes have had immense global ramifications. Examples of such crimes include bank fraud, environmental pollution, illicit drug trafficking, problems related to migration and crime, and human rights abuses, including the infringement of privacy.* Furthermore, it has become clear that the ways in which these and other crimes are processed in criminal justice systems vary immensely. The challenge facing UNCJIN as the clearing-house and centre for information exchange in international criminal justice is to assist Member States in becoming aware of the variety of criminal justice systems in the world, and of the diversity of solutions found in different countries.

B. Electronically distributed criminal justice information and its reliability

49. For the past 20 years, the Crime Prevention and Criminal Justice Branch has steadily developed and refined the collection of crime and criminal justice information and statistics within the framework of the

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*See, for example, the working paper prepared by the Secretariat entitled "Criminal justice and police systems: management and improvement of police and other law enforcement agencies, prosecution, courts and corrections; and the role of lawyers" (A/CONF.169/6, paras. 89-92); the background paper for the workshop on international cooperation and assistance in the management of the criminal justice system: computerization of criminal justice operations and the development, analysis and policy use of criminal justice information (A/CONF.169/13, paras. 37-40; and James Michael, *Privacy and Human Rights: an International and Comparative Study with Special Reference to Developments in Information Technology* (Paris, United Nations Educational, Scientific and Cultural Organization, 1994).

United Nations surveys of crime trends and operations of criminal justice systems. The surveys have increasingly revealed the considerable variety in levels of crime, processing of offenders, use of incarceration, and expenditure on the criminal justice system. Although some 20 reports utilizing the data on crime trends have been made public (A/CONF.169/CRP.2)* and a special form has been created to facilitate the publishing of comparative crime trends (*Trends: UNCJIN Crime and Justice Letter*), the biggest challenge before the Crime Prevention and Criminal Justice Branch, with its limited resources, is to disseminate the information to Member States. Much information has been collected, but not enough has been distributed.

50. The Crime Prevention and Criminal Justice Branch will be able to meet this challenge through UNCJIN in several ways. First, the data sets of the first three United Nations surveys of crime trends and operations of criminal justice systems are available at no cost on Internet via a special file transfer protocol.** Any person connected to Internet can access the data sets and use them for research or planning.*** Internet has already proved to be an excellent means of distributing United Nations data sets. In September 1994, there was an average access rate of 10 persons per day. One advantage of distributing such data sets electronically is that they may be improved and updated easily, which would not be the case if the data were published in hard copy.

51. The electronic dissemination of data brings not only increased efficiency but also new challenges. The validity and reliability of electronically obtained data, especially international crime and criminal justice statistics, are a real source of concern, largely because of the changeability of the data and because often the authoritative source of the information is difficult to determine. Although there are a number of cautionary "readme" files placed with the data sets that are available from the United Nations, there is often the problem of statistical data being misinterpreted. In an effort to solve the problem, the Crime Prevention and Criminal Justice Branch, together with regional institutes, especially the European Institute for Crime Prevention and Control, affiliated with the United Nations, has begun developing criminal justice profiles for countries contributing information to the United Nations surveys on crime trends and operations of criminal justice systems. The profiles are updated and validated after the data for each United Nations survey have been gathered. They include descriptions of the criminal justice systems of each country and an attempt to provide a meaningful context within which the statistical data of the countries may be assessed. The profiles can be accessed easily via the UNCJIN Gopher menu system.

52. It can be seen that disseminating information electronically is far more efficient and effective than other ways of disseminating information. Furthermore, the individuals connected to Internet are seeking information; thus, the "audience" on Internet is far more likely to have a use for such information. In addition, depending on the computer program, it may be possible to count the number of times the information is accessed and, presumably utilized. That cannot be done with hard copy. Finally, the dissemination of information on hard copy is a complex and expensive process, involving paper, ink, envelopes, a relatively slow mailing system, sometimes a year or more of lead time for updating, and large mailing lists or other marketing outlets.

C. Electronic libraries

53. The greatest problem with information in hard copy is that it is expensive to store and to purchase. With the enormous information explosion in criminal justice in the past 10 years, it has become impossible

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*Available from the Crime Prevention and Criminal Justice Branch.

**The current address for accessing this site is 128.204.33.18; login: anonymous; password: userid. More details on this service and on access, will be made available at the Ninth Congress. The results of the Fourth Survey of Crime Trends and Operations of Criminal Justice Systems will soon be made available as well.

***See the International Centre for Criminal Law Reform and Criminal Justice Policy, Guide to Internet Resources in Criminal Law and Criminal Justice, electronically available on Gopher (view.ubc.ca port 70) and World Wide Web (http://view.ubc.ca).

for libraries and documentation centres to collect everything. Thus, one important change in the development of libraries in the late twentieth century has been that they have given up developing their own collections as a primary concern and instead have begun to concentrate on accessing information. Libraries have begun to form consortia in order to develop joint electronic collections and to improve access to each other's collections. Internet and UNCJIN are working with such library organizations as the World Criminal Justice Library Network to provide access to those collections, including lists of conference documents and papers, which are difficult for libraries to collect or, once collected, to catalogue. Via UNCJIN Gopher, access to the world's leading criminal justice libraries is immediately available on Internet.

D. Participation of developing countries

54. One concern often raised in regard to the global electronic information society is that it will leave developing countries, or least developed countries, far behind in the information age. UNCJIN has recognized this problem and has published from time to time a newsletter in hard copy for those countries where telecommunications and computing are not well developed; however, this can only be a temporary solution to the massive problem of getting developing countries connected to the global information society. Providing developing countries with hard copy of the massive amount of information now exchanged electronically is simply not feasible. It is expensive to purchase, ship and store such information in hard copy. It would be far cheaper and more efficient to bring developing countries into the information age, to provide developing countries with access, via Internet, to modern criminal justice libraries and the databases made available by UNCJIN. The General Assembly, in its resolution 45/109, requested the Secretary-General and Member States to pay special attention to the developing countries in providing technical assistance and cooperation for the formulation of information programmes and statistics regarding crime and criminal justice. The challenge is for the Crime Prevention and Criminal Justice Branch, as well as all other United Nations entities concerned with the development of the infrastructure of less developed countries, to provide thos countries with the possibility of having electronic communications and of being connected to Internet. Substituting hard-copy publications is hardly a solution. Accessibility is crucial to less developed and developed countries alike. The key to meeting the challenge lies not only in assisting in the development of a basic infrastructure for telecommunications and computer hardware and software, but also in providing training for relevant personnel to become information-literate.* Developing countries must be empowered with the knowledge of how to access information and where to find it. This presents a challenge to all persons involved in criminal justice, regardless of the level of development of their countries.

55. While it is difficult to get developing countries connected to UNCJIN via Internet, it is certainly not impossible. There are already at least 30 developing countries with a full Internet link and many more with partial links. A UNDP initiative involving the Sustainable Development Network has attempted, through workshops, meetings and studies conducted throughout Africa, Asia and Latin America to assist developing countries in becoming connected to Internet.[8] Even the Sustainable Development Network project, which tackles the often challenging technological problems that arise in establishing Internet connections in developing countries, cannot manage without financial collaboration involving national and international organizations. There are also some intermediate solutions that may assist developing countries in establishing Internet connections (see annex).

56. One challenge that faces the United Nations crime prevention and criminal justice programme, is keeping up with the rapid developments in software and hardware. Internet is far different today than it was just one

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*It is not being argued here that expansion of information technology into developing countries will necessarily lead to improved economic growth. This has been shown to be, at best, a false hope (for an excellent analysis of the question, see Herbert S. Dordick and Georgette Wang, *The Information Society: A Retrospective View* (Newbury Park, Sage, 1993)). Aiding developing countries in becoming information-literate will ensure that they will not become passive victims of the propaganda of the information age. Developing countries must be empowered to evaluate information coming to them from the global information society.

year ago. While UNCJIN will become easier to use for those who wish to gain access to data, it is going to become more and more expensive for data and access providers, such as the Crime Prevention and Criminal Justice Branch, because they must keep up with the latest developments in hardware and software that make it easier for users to access information. Thus, the upgrading of hardware and software must be a continuous process. And it will be essential to make sure that the system operators and other relevant personnel are also kept up to date on new developments.

IV. FUTURE DEVELOPMENT OF THE UNITED NATIONS CRIME AND JUSTICE INFORMATION NETWORK

A. Transfer of the United Nations Crime and Justice Information Network to the United Nations Office at Vienna*

57. Future development of UNCJIN will depend on many factors. From an organizational point of view, important decisions will have to be made to encourage its development in a more decentralized manner. An important future development would be, once the clearing-house function has been established at Vienna, for regional institutes with a full connection to Internet to develop their own subsystems of UNCJIN. Obtaining a sufficient level of connection to Internet, however, can be expensive. The Crime Prevention and Criminal Justice Branch, because it is part of the United Nations system, has a relatively high level of connection to Internet at low cost. That is because large organizations such as the United Nations can absorb the rather high cost of high-level connection to Internet. Thus, it is more cost-effective to develop UNCJIN from Vienna. This process is taking place already with the generous assistance of the University of Vienna. The computer staff of the Institute of Applied Informatics of the University of Vienna, in cooperation with the coordinator of UNCJIN and the United Nations Office at Vienna, has been transferring parts of UNCJIN Gopher to Vienna from the School of Criminal Justice of the State University of New York at Albany and establishing in a graphic interface World Wide Web, which better visualizes information already available on UNCJIN Gopher. Ultimately, the graphic interface will allow for a better dissemination of texts, not only in English but also in other official languages of the United Nations.** Moreover, in an effort to further enhance UNCJIN, the National Institute of Justice of the United States Department of Justice, together with the private sector, is assisting the United Nations crime prevention and criminal justice programme in developing a computerized on-line crime and justice clearing-house. This clearing-house, the concept of which will be presented for a review at the workshop and the ancillary symposium, will also be the subject of a separate review by the Commission on Crime Prevention and Criminal Justice at its fourth session, to be held at Vienna from 30 May to 9 June 1995. Participants of the Ninth Congress are invited to offer comments on the present and future development of UNCJIN in the light of their experiences and expectations in the area of computerizing the collection and provision of crime and justice data and information.

B. Role of Governments, interregional and regional institutes and other entities

58. Regional and interregional institutes should give attention to providing UNCJIN with their newsletters, databases, reports and other publications in electronic form so that they may be placed on Internet. That is a service that the Branch can provide to the institutes. For their part, the institutes need to be careful to prepare their electronic files in a manner that makes it relatively easy to install them on Internet.

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*See also the report of the Secretary-General on progress made in the implementation of General Assembly resolutions 46/152, 47/91 and 48/103 (A/49/593, para. 79).

**The experimental World Wide Web site may be accessed using the following electronic address: http://www.ifs.univie.ac.at/~pr2gql/uno.

59. Member States can assist greatly in improving the flow of criminal justice information by working closely with the regional institutes, providing them with electronic information that they wish to have disseminated via Internet. Keeping up to date is much easier for end users than for providers because the level of connection to Internet that is required is not high and thus the cost is relatively low.

60. It costs nothing to join UNCJIN on Internet, so long as the user has a connection to Internet. And the cost of connecting to Internet continues to decline. In the United States, the cost of access to Internet has dropped to 12 United States dollars per month, including telecommunications charges. In other countries, the same service can be obtained from various commercial providers for the same price, but charges for telecommunications may be additional. Outside the United States, the cost of an electronic connection to any network depends largely on the local costs of telecommunications. The quality of the connection also depends on the quality of the telecommunications system. Large entities, such as national government departments and large universities, are almost always the first to obtain full connection to Internet. As a first step, therefore, it may be advisable to attempt to establish such a connection via universities and national government departments that have computing centres. It follows that United Nations regional and interregional institutes should take steps to establish cooperative working relationships with local universities and national government departments. Not only will it be possible to find effective and low-cost Internet connections, but it will also enhance the exchange of information between universities and regional institutes, and Governments.

C. Other implications

61. The time needed for maintenance of UNCJIN will increase in the future. The development of databases and gateways via Gopher to other databases must be constantly monitored. Since electronic addresses of databases and other Gopher systems are changing, and other Gopher systems are constantly changing the structure of their databases, the system operator who oversees UNCJIN must be constantly on the lookout for changes. As far as the UNCJIN-L bulletin-board is concerned, if the membership continues to increase rapidly, as it has the past two years, the amount of work needed to monitor the membership, to keep the flow of messages running smoothly, will also increase considerably. This is the most time-consuming aspect of UNCJIN, but also the most rewarding, as the above-mentioned examples demonstrate. There must be at least one staff person devoted to the development and maintenance of UNCJIN if its current high level of quality is to be kept up. Its quality and development, however, will also depend to a great extent on the ability of all United Nations interregional and regional institutes to contribute to the database, and to increase its membership further by sponsoring developing countries and encouraging national entities to provide information, as well as to become connected, to UNCJIN.

V. CONCLUSIONS AND RECOMMENDATIONS

A. Membership of the United Nations Crime and Justice Information Network

62. In the short time that UNCJIN has been in existence, massive changes have occurred in information technology. The global information society has emerged, bringing with it an explosion of criminal justice information.

63. Already many criminal justice professionals and scholars are exchanging significant and useful information via the UNCJIN bulletin-board, which provides an opportunity for the free exchange of information that is immediate, practical and relevant. While there has been a tenfold increase in membership in UNCJIN-L within five years, its members are predominantly in the United States. This is to be expected, since that is where Internet is most highly developed and where it all began. But it need not be that way. Many Member States have the facilities and knowledge to utilize Internet. They should encourage their

national government research, planning, legislative and criminal justice professionals to make regular use of UNCJIN on Internet. It is one effective way of keeping up to date on what is happening in criminal justice. It is also a resource that can be drawn on to solve practical, theoretical or policy-related problems.

B. Type and scope of information

64. Given its unique position in the United Nations system, the Crime Prevention and Criminal Justice Branch should continue to increase its efforts to store and disseminate not only its own data, but also data from other agencies, institutes and entities cooperating with the United Nations in the field of crime prevention and criminal justice. That could be done at little additional cost, especially if staff of the contributing entities were properly trained in the preparation of electronic documents for distribution on Internet.

65. In addition to storing and disseminating databases, the Branch should move towards fulfilling its other clearing-house function of providing a gateway to other databases and information around the world via the latest Internet software. Management and financial resources will be needed to carry out this task.

C. Use and provision of information

66. Member States can contribute to the blossoming of UNCJIN on Internet by, first of all, taking advantage of the services offered. The Branch and the institutes cooperating with the United Nations in the field of crime prevention and criminal justice have generated a vast amount of criminal justice information over the past 20 years, much of which has not been accessible. It could easily be made accessible on UNCJIN. What is more important, Member States should encourage national government departments, as well as non-governmental organizations, to make better use of the vast amount of information available, especially data from the United Nations surveys of crime trends and operations of criminal justice systems.

67. Secondly, Governments of Member States should support UNCJIN by providing databases and reports concerning their crime prevention programmes, special solutions to criminal justice problems, and newsletters on events and progress made in their countries. If Member States already have the facilities and high-level connections to Internet, they should establish their own Gopher system, making available their own array of national databases and information. In that way, the information will also become instantly available on UNCJIN Gopher.

68. Finally, Member States should make a greater effort to publicize their activities. News, events, meetings and conferences are all of great interest to members of UNCJIN-L - it is through notices on such subjects that members around the world gain an understanding of what issues are of concern in a particular country and are able to locate individuals who may be doing research on a problem that is relevant to one being faced in their own countries. Such information can only be obtained via an electronic bulletin-board. Using the electronic bulletin-board is also the most effective way to establish connections between criminal justice professionals and planners, especially those in government departments that are often insulated from the public and the rest of the world. It also offers a vehicle to improve interaction involving Governments and non-governmental organizations.

D. Assistance to developing countries

69. Assistance to developing countries is always a high priority. The Eighth Congress discussed the establishment of a comprehensive subsidy scheme in order to enable developing countries to participate in the electronic information exchange promoted by UNCJIN (A/CONF.144/14, paras. 57-66). Many developing countries have already obtained much of the technological equipment from which a great deal of information flows; however, those countries often do not have the educational infrastructure needed to cope with the

barrage of information that is being issued by the global information society. Educational and training seminars are, therefore, urgently needed for personnel in developing countries who have access to Internet. They need to be trained in how to establish connections with UNCJIN, how to develop search strategies to obtain the information that they want and how to evaluate the reliability and validity of that information.

Notes

[1]*Official Records of the Economic and Social Council, 1994, Supplement No. 11* (E/1994/31), chap. IV, para. 6.

[2]Ibid., chap. II, para. 8.

[3]Ibid., chap. VI, para. 4.

[4]P. S. Breivik, "Education for the information age", D. W. Farmer and T. F. Mech, eds., *New Directions for Higher Education*, No. 78, summer 1992.

[5]American Library Association Presidential Committee on Information Literacy, *Final Report* (Chicago, Illinois, American Library Association, 1989).

[6]*Time Magazine*, 25 July 1994.

[7]United Nations, *Treaty Series*, vol. 213, No. 2889.

[8]Raul Zambrano, "Sustainable Development Network: extending the links and their value", *Logon* No. 25, June 1994, p. 7; and Mutawakilu A. Tiamiyu, "Sub-Saharan Africa and the paperless society: a comment and a counterpoint", *Journal of the American Society for Information Science*, vol. 40, No. 5 (1989), pp. 325-328.

Annex

CONNECTING DEVELOPING COUNTRIES TO INTERNET

1. In many developing countries, telephone communications are in poor condition. The Governments of those countries, being aware of the fact that improvement of telephone communications is expensive and time-consuming, have pursued alternative projects involving satellite connections. For example, the Pan African News Agency, with the assistance of the United Nations Educational, Scientific and Cultural Organization (UNESCO), has put together a network linked by satellite that will allow bureaux in 13 African countries to have Internet linkage.* It is hoped that other United Nations organizations will provide the same kind of technical assistance. The ways to obtain connections to Internet in developing countries are described below, although the specific arrangements will depend on the exact location and the way in which the particular country's telecommunications system is administered.

2. All connections to Internet may be made in a number of different ways and at a number of different levels. Generally speaking, the connections available are as follows:

(a) A direct, full connection uses a local area network that provides Ethernet connection and capability and also provides the appropriate software and protocols. Most major universities throughout the world have such a connection, including those in developing countries where Internet is available. Such a connection allows for access to electronic mail, database retrieval and other special services of Internet such as Gopher and World Wide Web. Sometimes it is possible to obtain access to Internet via a university computing centre at relatively low cost, or on the basis of exchange of services;

(b) An indirect connection via a telephone line accesses a service provider such as Delphi, CompuServe or America On-line. These networks provide different levels of access to Internet. Delphi provides access to full services of Internet; CompuServe provides only electronic mail access. They charge relatively low rates: 15-20 United States dollars per month for unlimited on-line access, including telecommunications charges. The cost may be higher in countries other than the United States, however, because of the varying telecommunications costs. In some countries, especially where the Government has a monopoly on the telecommunications industry, the cost of telephone access to the network may be high. In many countries, however, some of the service providers are beginning to offer access fees that include lower telecommunications charges, and so prices are rapidly declining. Of the above providers, Delphi may be a relevant choice not only because of the outstanding Internet service it provides, but also because it has a full Spanish language network. Of particular importance as a service provider in developing countries is the network Association for Progressive Communication (APC) network, which has Internet nodes or access points throughout Africa, Asia, Central and South America, and central and eastern Europe;

(c) The use of locally linked computers with common networking software tends to be a loose arrangement, depending on the locality. Generally, there are two such "networks": FIDONET, which is popular in Africa, and UNIX to UNIX CoPy (UUCP),** which is popular in South America. These are generally informal arrangements that can nevertheless provide low-cost electronic mail connection to Internet. They are, however, difficult to set up for the novice and depend considerably on the existence of a local users' group for support and maintenance. They also depend entirely on the use of existing telephone lines and are usually available only on demand. Much of the access to the APC network in developing countries is through these informal arrangements.

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*Based on information published in the *New York Times* on 1 October 1994.

**For a detailed description and instructions on how to connect to Internet via UUCP, see James Gardener, *DOS User's Guide to the Internet* (Englewood Cliffs, New Jersey, Prentice-Hall, 1994).

3. The APC network of networks may be a suitable vehicle for obtaining access to Internet from developing countries. APC is a worldwide partnership of member networks dedicated to providing low-cost computer communications services for individuals and non-governmental organizations working for environmental sustainability, universal human rights and social and economic justice. APC enhances the effectiveness of local, indigenous organizations by encouraging expertise in computer networking. All APC members are independent organizations that retain full control of their network. Member networks pay a percentage of their income to the APC secretariat to diversify the growth of the Association.

4. APC was the primary provider of telecommunications for non-governmental organizations at the United Nations Conference on Environment and Development, held at Rio de Janeiro, Brazil, from 3 to 14 June 1992, at the World Conference on Human Rights, held at Vienna from 14 to 25 June 1993, and at the International Conference on Population and Development, held at Cairo from 5 to 13 September 1994. Plans are being made to provide similar services for the World Summit for Development, to be held at Copenhagen from 11 to 12 March 1995, and at the Fourth World Conference on Women: Action for Equality, Development and Peace, to be held at Beijing from 1 to 15 September 1995.

5. The APC network provides connections via FIDONET in the following countries in Africa: Algeria, Egypt, Ethiopia, Ghana, Kenya, Morocco, Senegal, South Africa, Tunisia, Uganda, United Republic of Tanzania, Zambia and Zimbabwe. Access is also possible via networks such as AlterNex, Chasque and EquaNex in South America, as well as UUCP and other networks. Access to eastern Europe and the newly independent States of the former Union of Soviet Socialist Republics is available through GlasNet. APC is accessible in over 150 countries throughout the world.

6. The major stumbling-block to developing countries in getting connected to Internet is inadequate telephone or telecommunications facilities. Service providers such as Sprint are working to improve the situation. As was the case with the UNESCO project involving the Pan African News Agency, there is now the possibility, provided there are the sufficient resources, to bypass the telephone line and to connect directly to the service providers via satellite telecommunications link. Some companies now offer this service, although in developing countries its availability is still limited and it is expensive. For the moment, worldwide access is best achieved using the networks listed below.

7. An additional advantage of using the APC network is that its system is designed to be quick and easy to use. Help is available in the step-by-step user manuals; there is also on-line and telephone help. Some APC members can provide assistance and training in the purchase, installation and use of equipment.

8. The cost varies from country to country, as does the level of access. Access fees to some of the networks are as follows (telephone fees may be higher):

Network	*Start-up fee*	*Monthly fee*	*Hourly fee*	*Free per month*
AlterNex*	US$ 20	US$ 10	US$ 5-10	1 hour
IGC*	US$ 15	US$ 10	US$ 3-10	1 hour
NordNet**	Skr 100	Skr 33	Skr 75	Equivalent of Skr 100 of usage
Pegasus***	$A 95	$A 20	$A 11-23	1 hour

*US$ = United States dollars.
**Skr = Swedish Kroner.
***$A = Australian dollars.

9. Other APC member networks charge similar fees: rates are purposely kept low. Fees are generally payable in local currency. Subscribing to any one of the member networks gives access to the others.

To be connected to the APC networks, a user needs the following:

(a) A personal computer;

(b) Access to an ordinary telephone line;

(c) Modem (to connect the computer to the telephone line);

(d) Any communications software;

(e) An account on any APC network.

10. To access UNCJIN on Internet via an APC network, the form below should be filled in and sent (by post, telefacsimile or electronic mail) to the appropriate member network in the following list:

AlterNex (for Brazil and other countries in South America)
IBASE
Rua Vicente de Souza 29
22251-070 Rio de Janiero
Brazil
Telephone: +55 (21) 286-0348
Telefacsimile: +55 (21) 286-0541
Electronic mail: suporte@ax.apc.org

Chasque (for Paraguay and Uruguay)
Casilla Correo 1539
Montevideo 11000
Uruguay
Telephone: +598 (2) 496-192
Telefacsimile: +598 (2) 419-222
Electronic mail: apoyo@chasque.apc.org

ComLink (for Austria, Croatia, Germany, Italy, Turkey and Yugoslavia)
Emil-Meyer-Str. 20
D-30165 Hannover
Germany
Electronic mail: support@oln.comlink.apc.org

Ecuanex (for Ecuador)
12 de Octubre 622, Of. 504
Casilla 17-12-566
Quito
Ecuador
Telephone: +593 (2) 528-716
Telefacsimile: +593 (2) 505-073
Electronic mail: intercom@ecuanex.apc.org

GlasNet (for the Russian Federation and other countries in the Commonwealth of Independent States)
ulitsa Sadovaya-Chernograizskaya
dom 4, Komnata 16, Third Floor
107078 Moscow
Russian Federation
Telephone: +7 (095) 207-0704
Electronic mail: support@glas.apc.org

GlasNet-Ukraine (GLUK) (for Ukraine)
14b Metrologicheskaya str.
Kiev, 252143
Ukraine
Telephone: +7 (044) 266 9481
Telefacsimile: +7 (044) 266 9475
Electronic mail: support@gluk.apc.org

GreenNet - Main Office (for the United Kingdom of Great Britain and Northern Ireland and other countries in Europe, as well as countries in Africa, Asia and the Middle East)
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GreenNet - Netherlands Office (for the Netherlands)
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Telefacsimile: +31 (80) 236-798
Electronic mail: support@antenna.nl

HISTRIA (for Slovenia)
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Ljubljana
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Telephone: +38 (61) 211-553
Telefacsimile: +38 (61) 152-107
Electronic mail: support@histria.apc.org

IGC - EcoNet/PeaceNet/ConflictNet/LaborNet (for China, Japan and the United States of America)
18 De Boom Street
San Francisco, California 94107
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Telephone: +1 (415) 442-0220
Telefacsimile: +1 (415) 546-1794
Electronic mail: support@igc.apc.org

Laneta (for Mexico)
Tlalpan 1025, col. portales
Mexico City
Mexico
Telephone: +52 (5) 277-4791
Telefacsimile: +52 (5) 277-4791
Electronic mail: soporte@laneta.apc.org

Nicarao (for Nicaragua, Panama and other countries in Central America)
CRIES
Apartado 3516
Iglesia Carmen
1 cuadra al lago
Managua
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Telephone: +505 (2) 621 312
Telefacsimile: +505 (2) 621 244
Electronic mail: ayuda@nicarao.apc.org

NordNet (for the Nordic countries and the Baltic countries)
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S-12154 Johanneshov
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Telefacsimile: +46 (8) 6000-443
Electronic mail: support@nn.apc.org

Pegasus (for Australia and other countries in South-East Asia and the Pacific islands)
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Telefacsimile: +61 (7) 257-1087
Electronic mail: support@peg.apc.org

SangoNet (for southern Africa)
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Telefacsimile: +1 (415) 546-1794
Electronic mail: apcadmin@apc.org

Form to be forwarded to the appropriate member network

Network to be joined (see also the list above): _____

Preferred user name: _____
(2 or 3 letters and/or arabic numerals without punctuation, e.g. pwilson, or an acronym)

Name: _____

Organization: _____

Address: _____

_____

_____

Telephone: _____ Telefacsimile: _____

Major areas of interest: _____

_____

_____

☐ To be billed monthly (enclosed is a refundable deposit of US$ 50)
☐ Subscription to be charged to credit card

Name as it appears on credit card: _____

Account number/expiration date: _____

Signature: _____

☐ Address may be included in the on-line directory
☐ Phone number may be included in the on-line directory